

# Module 4: Introduction to Numpy, Pandas & Matplotlib

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## Case Study

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## Case Study

### Domain – Retail

focus – Visualize the sales data

#### Business challenge/requirement

BigMart is one of the biggest retailer of Europe and has operations across multiple countries. You are a data analyst in IT team of BigMart. Invoice and SKU wise Sales Data for Year 2011 is shared with you. You need to prepare meaningful charts to show case the various sales trends for 2011 to top management.

#### Key issues

Data should be displayed pictorially to capture the attention of top management

#### Considerations

NONE

#### Data volume

- Approx 500K records – file BigMartSalesData.csv

#### Additional information

- NA

#### Business benefits

This exercise is an annual exercise and BigMart makes important investment decision based on trends

#### Approach to Solve

You have to use fundamentals of Matplotlib covered in module 5 and plot following 4 chart/graph

1. Plot Total Sales Per Month for Year 2011. How the total sales have increased over months in Year 2011. Which month has lowest Sales?
2. Plot Total Sales Per Month for Year 2011 as Bar Chart. Is Bar Chart Better to visualize than Simple Plot?
3. Plot Pie Chart for Year 2011 Country Wise. Which Country contributes highest towards sales?

4. Plot Scatter Plot for the invoice amounts and see the concentration of amount.  
In which range most of the invoice amounts are concentrated

#### Enhancements for code

You can try these enhancements in code

1. Change the bar chart to show the value of bar
2. In Pie Chart Play With Parameters shadow=True, startangle=90 and see how different the chart looks
3. In scatter plot change the color of Scatter Points

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